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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,792	09/01/2005	Edward J Sare	07811.0019-00	8239

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
PARVINI, PEGAH	
ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,792	SARE ET AL.	
	Examiner	Art Unit	
	PEGAH PARVINI	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-39* is/are rejected.

7)☒ Claim(s) *39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicants' argument regarding Cummings et al. with reference to the submission of a reference of common ownership is found persuasive; therefore, **the finality of the Office Action as set forth in the previous action is hereby withdrawn**. However, a new ground(s) of rejection as set forth below is presented.

Claim 39 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 26. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6, 13-18, 26-27, 29-30, 34-37, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 3,754,712 to Cecil.

Regarding claims 1, 13-15, 29-30 and 36-37, Cecil teaches a composition and method for its formation comprising an aqueous suspension or slurry of calcined kaolin clay having 70 percent solids suspension wherein slurry contains at least 35 percent by weight of particles coarser than 2 microns (column 2, lines 31-34, 42-46, 64-68; column 3, lines 34-36, 39-41). Cecil discloses that said clay is mixed with water and a small quantity of dispersant typically 0.01 to 0.1 percent based on the clay (column 2, lines 64-68; column 3, lines 37-39). Since the solids content is 70%, the amount of dispersant is calculated to be from 0.007 to 0.07 based on the slurry. In short, Cecil discloses forming a suspension of calcined clay in water which comprises dispersant (claim 1).

It is noted that the instant application claims that at least 40 % by weight of the particles have a particle size of at least about 2 μm; thus, there is overlapping ranges of particle size disclosed in the reference with the one claimed in the instant application. Since overlapping ranges have been held to establish *prima facie* obviousness, it would have been obvious to have selected from the overlapping portion of the range of particle size and the percentage of that particle size as that taught by Cecil to have reaches the invention as claimed. See MPEP § 2144.05.

Regarding claims 2-4, Cecil discloses that at least 35 percent by weight of the calcined kaolin clay has the particle size of coarser than 2 microns (column 2, lines 43-48; column 3, lines 50-54).

There is overlapping ranges of particle size between the disclosed particle size and the instantly claimed one, and overlapping particle sizes have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

Regarding claim 6, Cecil teaches solids content of 70 percent (column 2, lines 65-68; column 3, lines 34-36, and 39-41).

Regarding claims 16-18, Cecil teaches the use of dispersants such as alkali metal condensed phosphate exemplified by tetra-potassium (or tetra-sodium) pyrophosphate (column 3, lines 28-35).

Regarding claims 26-27, 34-36 and 39, Cecil disclose calcined kaolin clay slurry has a specific particle size distribution and solids content; Cecil, also, discloses the possibility of adding the slurry into a mill (for example, ball mill) to grind it (column 3, lines 63-66; column 4, lines 30-34).

Claims 23-25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claims 1 and 29 above, and further in view of US Patent No. 5,718,756 to Mohler.

Cecil teaches a calcined kaolin clay slurry having 70 percent solids content wherein at least 35% by weight of the particle have a size of greater than 2 microns.

Cecil does not expressly disclose the use of a pH modifier or pH adjuster in said slurry.

Mohler, drawn to paper coatings with good opacifying characteristics and good rheological properties, disclose that pH adjusting agents, such as sodium hydroxide, are among some of the conventional additives used in kaolin clay slurries (wherein the slurry is formed by mixing kaolin clay pigment particles, water, at least one of such conventional additives and some other components) to achieve a slurry pH of from about 5 to 10 (Abstract; column 3, lines 1-9, 34-46; column 4, lines 17-21, 37-46).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Cecil in order to include the a pH modifying agent as that taught by Mohler motivated by the fact that such components are amongst some conventional additives used in producing kaolin clay slurries which are used in coating compositions.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claim 1 above, and further in view of US Patent No. 3,309,214 to Joseph et al.

Cecil teaches a calcined kaolin clay slurry having 70 percent solids content wherein at least 35% by weight of the particle have a size of greater than 2 microns.

Cecil does not expressly disclose that said calcined kaolin clay comprises mullite.

Joseph et al. drawn to the use of calcined kaolin as pigments and filler, teach that if kaolin clay is subjected to shock calcining and prolonged heat treatment, the crystal

structure and physical form of the kaolin is altered so that, in effect, a novel pigment is formed having a higher degree of whiteness and brightness power wherein as part of the modification of the crystal structure, gamma-Al_2O_3 and mullite crystals are formed within the said calcined kaolin (column 1, lines 11-19, 40-48, 58-61; column 3, lines 7-20, 25-28).

Thus, it would have been obvious to have obtained some mullite within calcined kaolin in the Cecil's invention motivated by the fact that Joseph et al. expressly disclose that calcination and heat treatment cause crystal structure modification to the kaolin crystals and change some of the crystals to mullite as detailed above.

Claims 7-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claim 1 above, and in view of US Patent No. 4,423,118 to Corbett et al.

Regarding claims 7-8 and 10-12, Cecil although disclosing a calcined kaolin clay slurry comprising calcined kaolin particles wherein at least 35% by weight of them are coarser than 2 microns and wherein the solids content is 70 percent, is drawn to an embodiment wherein no thickener is used except in the "Prior Art" section where Cecil discloses and/or implies that it is conventional to use such additives – thickeners (column 2, lines 1-19).

However, Corbett et al., drawn to a coating composition used in coating paper wherein said composition comprises pigments such as clay and a binder such a as a latex of a copolymer, disclose the use of a water-soluble copolymer, different from the binder, in amounts which is sufficient to thicken the color coat wherein said water-soluble copolymer comprises compounds such as acrylic acid and polyacrylamide (Abstract; column 1, lines 58-68; column 3, lines 13-15; column 12, lines 1-5). Said water-soluble copolymer which thickens the coating composition (i.e. the water soluble copolymer is a thickener) is employed in amounts from about 0.01 to about 4 wt% per 100wt% of the pigment. Thus, there is overlapping ranges of the thickener with that instantly claimed; overlapping ranges have been held to establish *prima facie* obviousness. MPEP § 2144.05.

Therefore, it would have been obvious to one of at the time of the invention, to modify Cecil in order to include a thickener in a small amount such as those disclosed by Corbett et al. motivated by the fact that Corbett et al. disclose that such as thickeners, water-soluble copolymer comprised of acrylic acid and polyacrylamide, are employed to thicken the coating color (column 1, lines 65-68). Furthermore, Corbett et al. and Cecil are from relevant field of art as detailed above.

With reference to the disclosure of Cecil in not using cellulose thickeners, it is noted that the thickeners disclosed by Corbett et al. are not cellulose derivative; furthermore,

Claims 7-10, 31, 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claims 1 and 29 above, and in view of US Patent No. 5,799,978 to Grinnell and in further view of US Patent No. 4,716,186 to Portnoy et al.

Regarding claims 7-10 and 38, Cecil although disclosing a calcined kaolin clay slurry comprising calcined kaolin particles wherein at least 35% by weight of them are coarser than 2 microns and wherein the solids content is 70 percent, is drawn to an embodiment wherein no thickener is used except in the "Prior Art" section where Cecil discloses and/or implies that it is conventional to use such additives – thickeners (column 2, lines 1-19).

Grinnell teaches an improved cover material for hard- and soft-book covers wherein said cover material comprises, pigments, acrylic polymer (i.e. thickener) which have been found to give good print performance and good coat-ability properties (column 2, lines 61-62; column 3, lines 5-7, and 21-23), and other components that are conventionally used to disperse pigments to facilitate coating and the like such as small amounts of thickeners such as methyl cellulose, bydroxypropyl cellulose, and alginates (column 5, lines 20-23, and 48-51). Moreover, Grinnell teaches the use of the cover material in coating substrates which include sheets or webs of woven and nonwoven fabrics of natural and synthetic fibers, fibrous products and else (column 5, lines 60 to column 6, lines 1-10).

At the time of the invention, it would have been obvious to combine Cecil with Grinnell motivated by the fact that Grinnell discloses that the thickener components are

conventionally used to disperse pigments, facilitates coating, and impart good print performance as detailed above. In addition, the references are from the same field of art. With reference to the disclosure of Cecil in not using CMC thickeners, it is noted that Portnoy et al., drawn to starch derivatives and their use in latex paint, disclose that a particularly noteworthy feature or benefit of starch derivatives such as HEC in latex paint is its effect as a thickener which results in a paint composition that has notably improved flow/leveling characteristics and spatter resistance relative to that exhibited in comparable paint compositions (Portnoy et al., column 2, lines 51-58).

Thus, it would have been obvious to one of ordinary skill in the art to modify the slurry and composition of Cecil in order to use thickeners, even cellulose derivative thickeners such as CMC in the calcined kaolin clay slurry as that taught by Grinnell motivated by the fact that not only they are conventional components used to disperse pigments, facilitates coating, and impart good print performance as detailed above, but also because, as detailed above, cellulose derivatives impart notable effect in paint composition with reference to flow and leveling characteristics as detailed above.

With reference to claims 31-32, the combination of reference disclose the use of thickeners in an amounts having overlapping ranges with the ones instantly claimed. It is noted that Grinnell discloses the use of thickeners for the advantages that bring to the composition; thus, it would have been obvious that they are added before obtaining the final slurry as that recited in instant invention motivated by the fact that Grinnell is disclosing the components needed to make a final composition used in coating paper

wherein thickeners are utilized for the many advantages they bring to the final composition and because the use of thickeners is motivated by, for example, the fact that Portnoy et al. expressly disclose that a particularly noteworthy feature or benefit of starch derivatives such as HEC in latex paint is its effect as a thickener which results in a paint composition that has notably improved flow/leveling characteristics and spatter resistance relative to that exhibited in comparable paint compositions, as detailed above.

Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil as applied to claim 1 above and, further, in view of US Patent No. 6,171,702 to Malhotra et al. as evidenced by US Patent No. 2001/0051230 to Colton et al. and/or evidenced by US Patent No. 4,686,260 to Lindemann et al.

Regarding claims 19-22, Cecil although disclosing a calcined kaolin clay slurry comprising calcined kaolin particles wherein at least 35% by weight of them are coarser than 2 microns and wherein the solids content is 70 percent, does not expressly disclose the use of a biocide.

Malhotra et al., drawn to coated substrates and compositions used to coat substrates, disclose the use of biocide in said composition, and, for example, in an embodiment disclose the use of about 0.1 parts by weight to about 2 parts by weight of

biocides such as 2-bromo-4'-hydroxyacetophenon, or 3,5-dimethyl tetrahydro-2H-1,3,5-thiadiazine-2-thione or 5 chloro-2-mthyl-4-isothiazoline-3-one (column 15, lines 43-52).

Therefore, it would have been obvious to modify Cecil to include the use of a biocides such as those taught by Malhotra et al. motivated by the fact that biocides are known to be used to prevent the mildew as evidenced by Lindemann et al. (column 9, lines 4-5) or to prevent the formation of fungii or bacteria on the surface of the coating as evidenced by Colton et al. ([0025]) in coating compositions.

Response to Amendment

Applicants' submission of new claim 39, filed August 19, 2008 is acknowledged. However, said new claim is not found allowable and does not place the application in condition for allowance.

Response to Arguments

Applicants' arguments, see page 11, filed August 19, 2008, with respect to the rejection(s) of claim(s) 1, 29, and 36-38 under Title 35 U.S.C. 112-second paragraph have been fully considered and are persuasive. Therefore, the rejection of said claims under Title 35 U.S.C. 112-second paragraph has been withdrawn.

Applicants' arguments, see page 12, filed August 19, 2008, with respect to the objection(s) made to claim(s) 2 have been fully considered and are persuasive. Therefore, the objection to said claim has been withdrawn.

Applicants' arguments filed August 19, 2008 relating to Cecil (US Pat. 3,754,712) have been fully considered but they are not persuasive. Applicants have argued that independent claims 1, 29, and 37 are not obvious over Cecil under 103 rejection because those claims recite a range that is critical as evidenced by unexpected results achieved, as least in part, due to the recited range. The Examiner, respectfully, submits that no tangible evidence and/or experimental results have been submitted to compare the instant invention and that of the prior art to show unexpected results. Arguments cannot take the place of evidence in the record to overcome rejection. MPEP § 2145. Furthermore, since the prior art disclose overlapping ranges of particle size and amounts of particles having those specific size, and overlapping ranges have been held to establish prima facie obviousness, the rejections as presented in the previous Office Action and above under 103 over Cecil are found proper.

In response to Applicants' arguments against the references individually, specially Mohler and Joseph, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants' argument regarding Cummings et al. with reference to the submission of a reference of common ownership is found persuasive; therefore, the finality of the Office Action as set forth in the previous action is hereby withdrawn. However, a new ground(s) of rejection as set forth above is presented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. P./
Examiner, Art Unit 1793

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793